

U.S. ENVIRONMENTAL PROTECTION AGENCY  
REGION 10  
SEATTLE, WASHINGTON 98101

APPLICATION OF:

ARCO Alaska, Inc.  
P.O. Box 360  
Anchorage, Alaska 99510  
AND  
SOHIO Alaska Petroleum Co.  
Pouch 6-612  
Anchorage, Alaska 99502

No. PSD-X81-13 PSD IV  
APPROVAL OF APPLICATION  
TO CONSTRUCT

Pursuant to the Agency regulations for the Prevention of Significant Deterioration of Air Quality (PSD) set forth at Title 40, Code of the Federal Regulations, Part 52 and based upon the complete application submitted on April 2, 1981 by ARCO Alaska, Inc. and the SOHIO Alaska Petroleum Company, the Regional Administrator now finds as follows:

FINDINGS

1. ARCO Alaska, Inc. and the SOHIO Alaska Petroleum Company (hereafter referred to as ARCO/SOHIO) propose to install additional gas-fired turbines and heaters in the oil field at Prudhoe Bay, Alaska.
2. An analysis of projected emissions indicates that this project has the potential to emit more than the EPA significance levels for nitrogen oxides ( $\text{NO}_x$ ), particulate matter (PM), carbon monoxide (CO) and sulfur dioxide ( $\text{SO}_2$ ) and is therefore subject to PSD review for those pollutants.

3. The proposed modification is located in an area designated as "Class II" under Section 162(b) of the Clean Air Act.

4. Modeling analysis of CO, NO<sub>x</sub>, SO<sub>2</sub> and PM has been conducted and demonstrates that while emissions of these pollutants will increase, the modification will not cause any violations of the applicable National Ambient Air Quality Standards or PSD increments so long as the facility is operated in accordance with the conditions specified below. With the application of best available control technology, as required by Section 165 (a)(4), operation of the proposed turbines and heaters will meet the applicable PSD requirements.

Accordingly, it is hereby determined that, subject to the conditions set forth below, AKCO Alaska, Inc. and the SOHIO Alaska Petroleum Company will be permitted to install the subject turbines and heaters at Prudhoe Bay, Alaska.

#### APPROVAL CONDITIONS

1. Emissions of nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), particulate matter (PM), and sulfur dioxide (SO<sub>2</sub>) shall not exceed the following:

#### EMISSION LIMITATIONS

<u>Equipment</u>	<u>Pollutant</u>	<u>Tons/Year</u>	<u>Performance Limit</u>
Gas Turbines	NO <sub>x</sub>	8,217	150 (14.4/Y)ppm*
	CO	1,460	109 lb/10 <sup>6</sup> scf of fuel used
	PM	198	10% opacity
	SO <sub>2</sub>	48	
Process Heaters	CO	21	0.018 lb/10 <sup>6</sup> BTU
	PM	12	
	SO <sub>2</sub>	4	
	NO <sub>x</sub>	88	0.08 lb/10 <sup>6</sup> BTU
> 43x10 <sup>6</sup> BTU/hr	NO <sub>x</sub>		0.10 lb/10 <sup>6</sup> BTU
< 43x10 <sup>6</sup> BTU/hr	NO <sub>x</sub>		

\*NO<sub>x</sub> emission factor for gas-fired turbines is modified by an efficiency factor Y (manufacturer's rated heat rate at rated peak load) which cannot exceed 14.4 kilojoules/watt-hour based at 15% oxygen on a dry basis.

2. With the exception of NO<sub>x</sub>, CO, PM, and SO<sub>2</sub> increases in

1 potential emissions of any pollutant regulated under the Clean  
2 Air Act resulting from this operation will be less than the  
3 significance levels.

4 3. ARCO/SOHIO shall notify Alaska Department of Environmental  
5 Conservation (ADEC) of any occurrence of any emissions in excess  
6 of limits specified in Condition Numbers 1 and 2 above; such  
7 notification shall be forwarded to ADEC in writing in a timely  
8 fashion and in each instance no later than ten (10) days from the  
9 date of such occurrence. The notification shall include an  
10 estimate of the resultant emissions and a narrative report of the  
11 cause, duration and steps taken to correct the problem and avoid  
12 a recurrence. ARCO/SOHIO shall contemporaneously send a copy of  
13 all such reports to EPA.

14 4. This approval shall become void if on-site construction is  
15 not commenced within eighteen (18) months after receipt of the  
16 approval or if on-site construction once initially commenced is  
17 discontinued for a period of eighteen (18) months.

18 5. As approved and conditioned by this permit any construction,  
19 modification or operation of the proposed facility shall be in  
20 accordance with the application which resulted in this permit.  
21 Nothing in this permit shall be construed to relieve ARCO Alaska,  
22 Inc. and the SOHIO Alaska Petroleum Company of its obligations  
23 under any State or Federal laws including Sections 303 and 114 of  
24 the Clean Air Act.

25 6. Compliance with emission limitations shall be demonstrated by  
26 source tests and a program of emission monitoring as described  
27 below:

28 a. Compliance Demonstration:

29 Compliance testing shall be conducted within 60 days  
30 after achieving the maximum production rate at which the turbines  
31 or process heaters will be operated but not later than 180 days  
32 APPROVAL OF APPLICATION TO CONSTRUCT - Page 3 of 5

1 after startup of the specific emission source. The NSPS testing  
2 requirements for NO<sub>x</sub> from gas turbines (40 CFR 60.335) shall be  
3 followed for each turbine. The company may submit for EPA  
4 approval an alternative test plan for the gas turbines addressing  
5 such alternatives as factory testing rather than on-site testing  
6 and testing of a certain proportion of the gas turbines for each  
7 model group rather than each individual gas turbine. EPA Method  
8 7 shall be used for NO<sub>x</sub> from the process heaters. Only one of  
9 each kind of process heater must be tested. The company shall  
10 submit a test plan to EPA for approval to demonstrate that the  
11 heater tested is representative of the heaters for which testing  
12 is exempted. No compliance testing is required for CO.

13 b. Emission Monitoring:

14 In addition to the NSPS requirements (40 CFR 60.334)  
15 one of the following monitoring schemes is required: (a) a  
16 continuous monitoring system shall be installed to monitor CO or  
17 O<sub>2</sub> for all gas-fired process heaters with a capacity greater  
18 than 43x10<sup>6</sup> BTU/hr. These monitors shall comply with the  
19 specification requirements in Appendix B of 40 CFR Part 60; or  
20 (b) a periodic monitoring program for the process heaters with a  
21 capacity greater than 43x10<sup>6</sup> BTU/hr using a portable CO or O<sub>2</sub>  
22 analyzer.

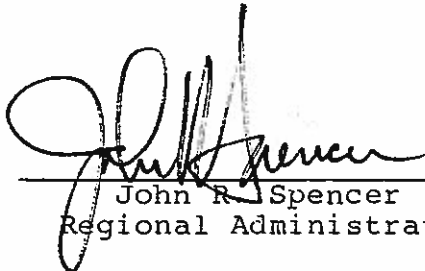
23 The company shall submit a monitoring plan to EPA for  
24 approval describing the details of the program such as monitoring  
25 frequency, proposed instrumentation, and quality assurance  
26 procedures. Monitoring records shall be available to EPA upon  
27 request and shall be maintained for a period of two years.

28 7. EPA Regional Office and ADEC shall be notified of the  
29 commencement of construction and the start up date within thirty  
30 (30) days of the date of their occurrence.

1        Access to the source by EPA or State regulatory personnel  
2 will be permitted upon request for the purpose of compliance  
3 assurance inspections. Failure to allow such access is grounds  
4 for revocation of this permit.  
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John R. Spencer  
Regional Administrator